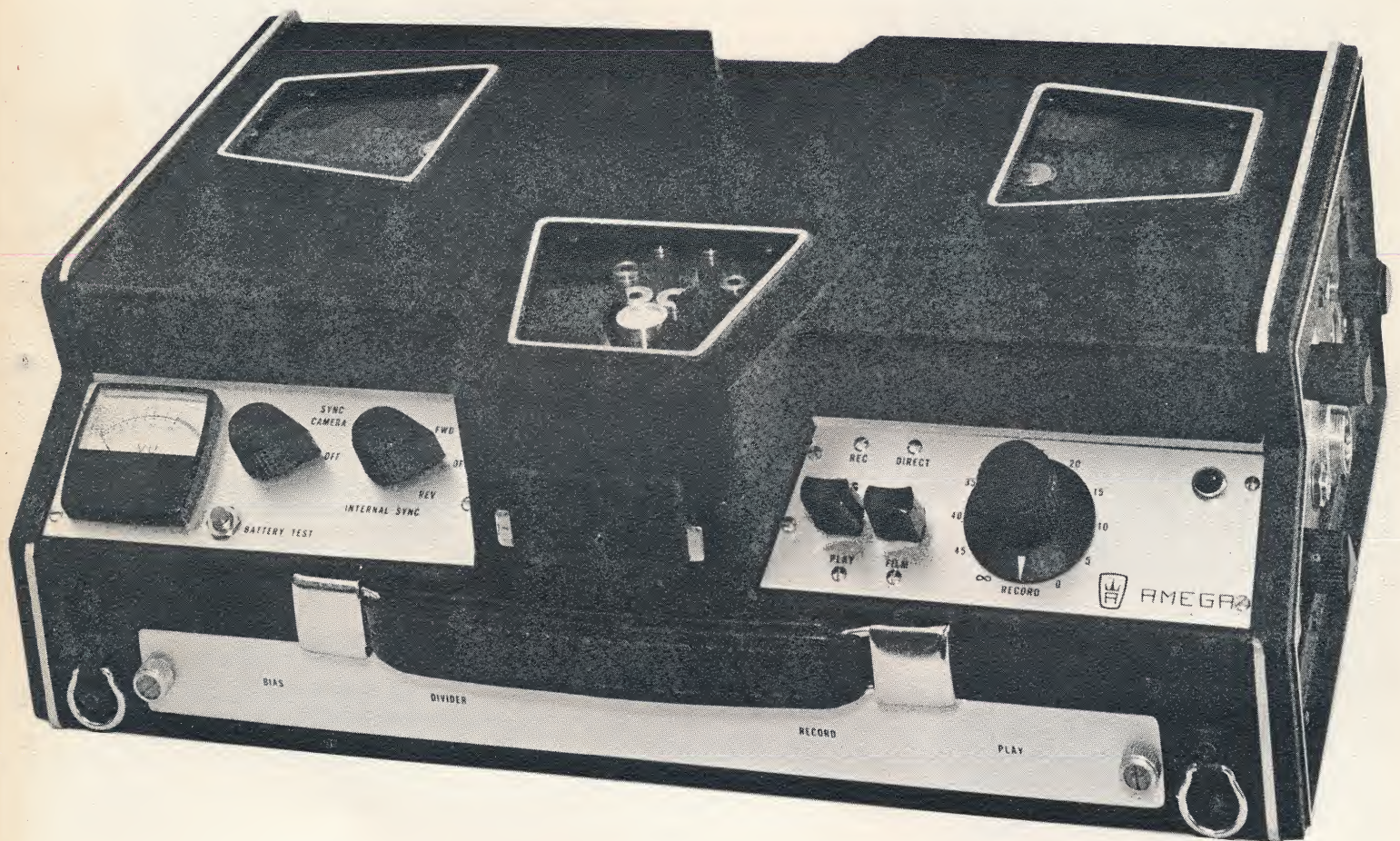


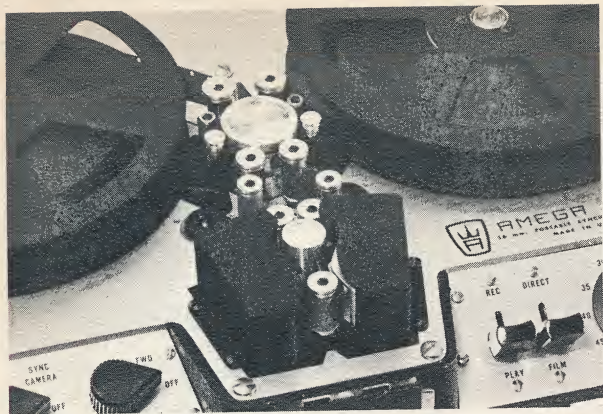
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The AMEGA M-3

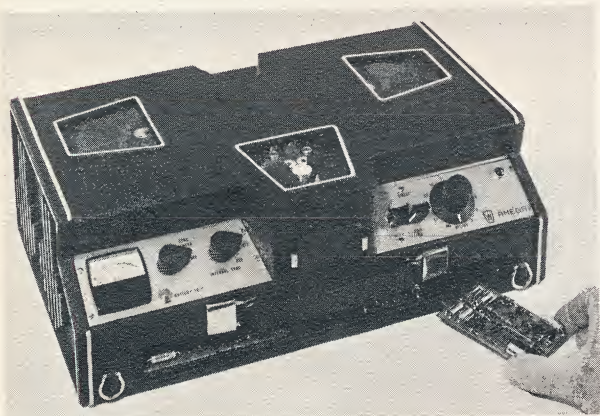
the first **PORTABLE** synchronous magnetic
16mm FILM RECORDER



COMPLETELY SELF-CONTAINED,
OVER-THE-SHOULDER
STUDIO QUALITY



Unique film movement utilizes instrumentation-type drive which holds flutter to less than .15 any band.



Plug-in modules are interchangeable between microphone pre-amplifier, record amplifier and playback preamplifier. Bias oscillator and one divider module complete amplifier section.



Input-output panel located at right hand end of recorder so that cables will trail the operator during portable operation.

The AMEGA M-3

is the first new innovation in motion picture sound recording in the past ten years. It is truly portable in size and function for over-the-shoulder operation. The self-contained batteries drive a salient pole synchronous motor utilizing a miniaturized solid state converter. Standard 16mm magnetic film is used. The specifications of the amplifier and the film travel speed meet and maintain all SMPTE standards.



1. Plug-in module compartment. Recording and playback preamplifiers, microphone preamplifier, bias oscillators and "tuned fork" divider.
2. Vu-Meter for record or reproduce level. "Sync-Camera" drive switch. "Internal-Sync" drive forward-reverse switch. Battery test SW.
3. Record control panel. (Record-playback switch, film-direct monitor, and record gain control.)
4. Record and playback head assembly. Plug-in type with azimuth adjustment made at factory.
5. Sprocket drive from sync motor.
6. Self-contained reel assemblies for 400 ft. film capacity.
7. Cover for sound proofing, with windows for reels and drive. Case made from cast aluminum.
8. Audio and power panel for connecting microphone input, bridge input, dialog/music switch, headphone jack, monitor gain control. AC power plug, internal-external power switch, battery charger plug, and camera-sync input and "automatic slating"

FIELD OR STUDIO

- The Amega M-3 is ideal for field use with any camera which has a pulse generator, or with camera driven by synchronous motor. Absolute lip-sync is achieved.
- Recording directly on 16mm magnetic film eliminates the transfer process which is necessary when using 1/4" tape. The result means savings in dollars and time.
- All SMPTE and industry standards are maintained with the use of 16mm magnetic film. Playback is immediate, and the editing process is greatly simplified.
- Audio circuitry and components are equal to the Amega studio recorders.
- Standard 16mm 400 ft. reels of magnetic film for ten minutes of continuous operation. Split-apart self-contained reel assemblies permit ease of loading.
- Salient pole synchronous motor is gear coupled to the sprocket drive. Absolute sync is achieved from camera pulse signal. The pulse signal from the camera, amplified through the inverter, controls the speed of the synchronous motor. Built-in frequency generator permits using recorder for synchronous sound with no external source of power or frequency regulation.

Synchronous Magnetic 16mm Recorder

NO RESOLVING REQUIRED

Using the M-3, standard 16 MM magnetic film is ready for syncing to picture for editing or double system playback.

M-3 INTERLOCK WITH THE PROJECTOR

Daily picture and sound track rushes are simplified when using the model M-3. For sync playback to picture the M-3 is easily interlocked with any projector having a 1440 or 1500 rpm output shaft. Using the same principal as the pulse generator from the camera, the projector is correspondingly equipped with a pulse unit (model ASPP) generating an output of 50 or 60 cycles. When the projector starts the M-3 starts and will run frame for frame in sync. Significant with this system is that it corresponds with major studio practices but without heavy duty or cumbersome equipment.

TRANSFER 1 TO 1 USING 16 MM MAGNETIC FILM

When a work copy is required, no resolving is necessary. Transfer from 16 to 16 may be accomplished in any studio. Although the unit is only manufactured in 16 MM the quality is equal to standards for 35 MM. Since the advent of television most studios shooting in 35 are also equipped to transfer 16 MM tracks. The transfer to 35 MM magnetic film within the studio is a simple process.

M-3 USED FOR TRANSFER OF 1/4" TAPE

The Model M-3 with its built-in inverter will operate either from "line" frequency outside pulse frequency source or from the internal "tuned fork frequency" generator. This, therefore, means that tape recorders which have a pulse head and record 50 or 60 cycle signals on the tape can be used to transfer directly to the Model M-3. For tape units where the output is directly from the pulse head a booster pre-amplifier Model TP-1 is used. Since 1/4" tape is ultimately dependent upon transfer for its editing process the use of the M-3 for this purpose proves to be convenient and economical. Transfer can be done in the studio or in the field.

PROFESSIONAL DOUBLE SYSTEM RECORDING

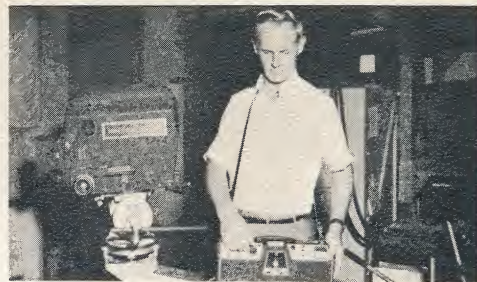
With the M-3 it is possible to record in the field independent of lines power. The pulse from the camera controls the recorder frame for frame with the picture. When the camera is equipped with a synchronous motor, no wires are necessary between camera and recorder. The sound is ready for editing or immediate playback with the picture. Both time and money are saved with this process.

NEWS AND DOCUMENTARY FILMS

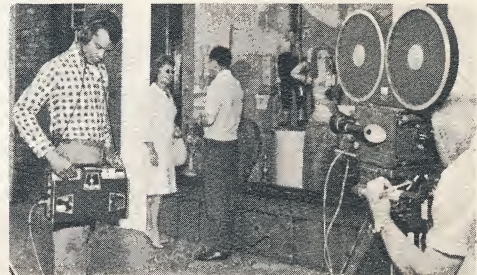
Many documentary films are made where the primary sound track is camera "single system" for original news release, whereas simultaneously, the M-3 is used for the master track and final editing process.

MAINTENANCE SIMPLIFIED WITH M-3

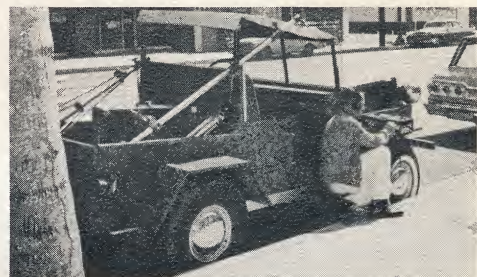
Do to its modular construction each section of the amplifier is an "independent" Amega guaranteed Module," the inverter is a plug-in unit as well as the "tuned fork" generator assembly. Trouble shooting for any malfunction can be accomplished by the layman following simple instructions.



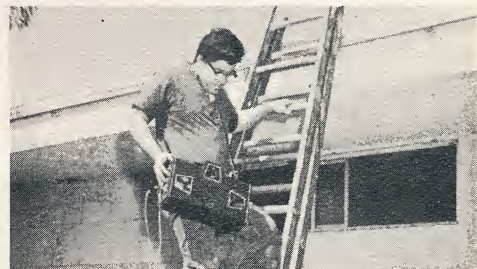
Amega M-3 with Mitchell "16" being used as double system recorder.



M-3 and Auricon camera, double system, using line source 110 volt-60 cycle power.



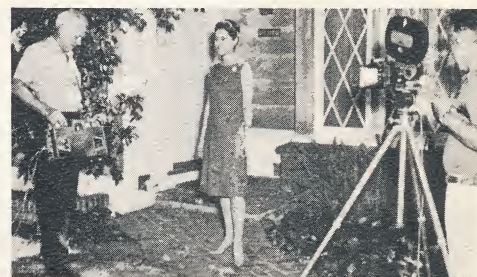
On location, the M-3 can be used with any camera with "sync pulse out".



Checking batteries before location shooting on roof of building.



Arriflex camera with "pulse sync" and M-3 Portable Recorder.



"Pulse sync" from Arriflex camera to Amega M-3 Recorder.

INSTRUMENTATION ACCURACY

The Model M-3 is the first completely portable 16mm recorder. The original design concepts and models were related to the instrumentation field. The requirements in this area involve an accuracy of three parts in one million speed control. To regulate this accuracy, a "tuned fork" is used. The fork control is similar to that used in some of our latest electronic time pieces.

SYNCHRONOUS MOTOR

A special synchronous motor was developed to meet the torque and environmental requirements. Having a basic frequency of either 50 or 60 cycles, the motor speed selected was 1500/1800 respectively.

GEAR DRIVE

A gear head was developed with ratios of 12:1, 12½:1 and 15:1. These ratios correspond to 25 frames per second 50 cycles, 24 frames per second 50 cycles and 24 frames per second 60 cycles.

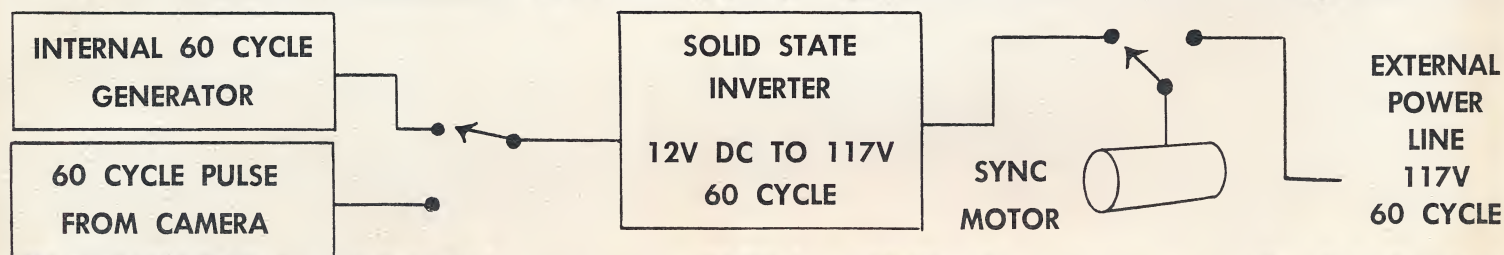
ALL PARTS "TOOLED"

Significant to construction is "tooling." Many parts are "die castings," others from precision "stamping dies." Non-corrosive aluminum and stainless steel is used wherever applicable. ALL rollers and drums are ball bearings. The film drum flywheel is turned from bar brass and precisely balanced.

TESTING

More than eight hours are spent testing each unit. This involves mechanical and audio to maintain all industry, S.M.P.T.E., and Amega standards.

Each unit is run on both battery and mains power. A Camera pulse generator is fed to the inverter. The "internal" frequency control is checked to line frequency for two hours.



AMEGA M-3 SPECIFICATIONS

Film type: Standard 16 MM magnetic film

Tracking: Standard edge track.

Other track placements available on special request.

Track width: 200 mils standard for 16 MM master recording.

Drive Motor: Salient pole synchronous 117 volts 60 cycle.
Also available 50 cycle.

Takeup and rewind: DC torque motor, for rewind.

Power supply: 12 and 24 volts DC from nickel cadmium rechargeable batteries or 117 volt 60 cycle from power line.

Output from inverter: 117 volts 60 cycle 20 watts.

Internal frequency: Transistorized frequency generator for internal 60 cycle sync signal and external sync from camera.

Amplifiers: Transistorized plug-in microphone preamplifier, record amplifier and playback preamplifier.
All completely interchangeable.
Transistorized plug-in bias oscillator.

Inputs: Microphone 50-250 ohm 100 DB gain.

Bridge: 20 K ohm 20 DB gain.
For Bridging 600 ohm line.

Frequency response: 50 to 10,000 cycle $\pm$ 2 db.

Distortion: Less than 1% total harmonic from recorded film.

Flutter and wow: Less than .15 any band

Signal to noise ratio: 55 db.

Weight: Less than 26 lbs. with batteries and film.

Power Consumption: Battery operated with B-5 battery pack.

Film Capacity: 400' 16 MM Magnetic Film.

Record Time: Two hours with full battery charge.

Reels Self-contained with lower flange integral part of take-up rewind assemblies. Upper Flange threaded clockwise. Hand rotation makes reel assembly captive to film.

Film Speed: 24 frames per second/36 feet per minute or 25 frames per second/37.5 feet per minute; for S.M.P.T.E. or C.C.I.R. 50/60 cycle operation (must be specified along with edge or center tracking)

Output: +8 DBM

Drive Sprocket: 12 tooth positive gear drive from synchronous motor.

Enclosure dimensions: 15-7/8" wide by 9-7/8" deep by 5¼" high with cover closed. Note: Top cover not removable unless hinge assembly is unscrewed from main assembly. Height with cover assembly at highest point 13-5/8". Operation controls can be used with cover closed.

Gain control located front panel. Film direct lever switch for "A" "B" of incoming and recorded signal. Record/play lever switch.

Bridge input will accept up to + 8 dbm input level.

Dialogue/music equalization switch. Music position flat recording.

Dialogue position roll of at 500 cycles down 8 db at 50 cycles.



AMEGA

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AN AFFILIATE OF OMEGA ENGINEERING COMPANY

Manufacturers of Motion Picture Sound Devices